

REMARKS

Claims 1-4, 6-17, and 21-24 are now pending in the application. Claims 1, 16, 17, 22 and 24 have been amended. Support for the foregoing amendments can be found throughout the specification, drawings, and claims as originally filed. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

CLAIM OBJECTIONS

Claims 22 and 24 are objected to because of certain informalities. Applicant has amended claims 22 and 24 to address the Examiner's objections. Therefore, reconsideration and withdrawal of this objection are respectfully requested.

REJECTION UNDER 35 U.S.C. § 102

Claims 1, 3-4, 6-7, 10, 16, and 23 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Koumura et al. (U.S. Pat. No. 4,463,361). This rejection is respectfully traversed.

Applicant has amended claims 1 and 16-17 to more clearly point out the claimed subject matter.

Claim 1 recites "[an] apparatus [] adapted to hold the printheads substantially stationary while droplets are emitted from the printheads" and "a plurality of rollers arranged to move the substrate past the printheads during the emission of the droplets from the printheads." Support for the amendments may be found for example at page

10 line 10 to page 10 line 18 and page 12 line 8 of the PCT application originally filed. Applicant submits that Koumura fails to anticipate these limitations.

One or more embodiments of claim 1 can, for example, print an image on the substrate in a "single pass" of the substrate past the printheads. In such an embodiment, a substrate might be continuously moved through the printer giving a high throughput and efficient printing.

One or more embodiments of claim 1 can employ a "multi-pass" printing technique in which the substrate is moved past the printheads several times to build up the printed image through the deposition of several layers or swathes of ink.

One of more embodiments of claim 1 can provide apparatus including a roller arrangement for more accurate movement of the substrate during printing. Accuracy of movement of the substrate in such embodiments can be of importance to achieve proper registration of the droplets deposited on the substrate.

In contrast, Koumura does not appear to disclose that the printheads are stationary while emitting ink. Figure 1 of Koumura appears to show that a substrate for printing comprises a paper 2 which is fed through several sets of rollers for movement through the printer in the direction indicated in Figure 2 as C. Adjacent the paper 2 are arranged two "recording means" 22 and 23 which the Examiner considers to be analogous to the printheads of claim 1. The recording means 22 and 23 are significantly narrower than the substrate paper 2 in a direction perpendicular to the direction of advance C of the paper 2.

Thus, Koumura at best appears to show that the printer operates by moving the substrate to a position adjacent the recording means 22, 23, holding the paper 2

stationary while moving the recording means 22, 23 perpendicular to the direction of advance of the paper 2. Once the reciprocating recording means have printed a stripe of the image onto the paper 2, the paper 2 is advanced in direction C and a further stripe of the image is printed, and so on until the full image is printed. It appears by this method that an image wider than the width of the recording means, 22, 23 can be printed.

Applicant submits that Koumura does not appear to disclose operating the printer so that "the printheads ... are stationary while emitting ink" as asserted by the Examiner.

Applicant further submits that one of ordinary skill in the art would not be motivated to modify Koumura to arrive at claim 1. For example, if images wider than the width of the recording heads 22, 23 were to be printed, then the paper 2 would need to be moved backwards through the printer in the reverse direction to the direction of movement C shown in Figure 2. Koumura at best appears to show that the recording heads 22, 23 move over a stationary substrate during printing.

Further, Applicant submits that one of ordinary skill in the art seeking to improve a printing system in which a substrate is moved past printheads during the printing operation would not consider and further be motivated to modify Koumura, which relates to a different type of printing system. Koumura does not appear to provide sufficient teaching that would lead one of ordinary skill in the art to change entirely the printing system of Koumura having a reciprocating printhead to a system as defined in claim 1.

In view of the foregoing, Applicant submits that claim 1 and its dependent claims 2-4, 6-15, and 21-24 define over the art cited by the Examiner. Claims 16-17 recite distinguishing features similar to those of claim 1. Thus, claims 16-17 define over the

art cited by the Examiner for one or more of the reasons set forth above regarding claim 1.

REJECTION UNDER 35 U.S.C. § 103

- A. Claims 2, 11 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Koumura et al. (U.S. Pat. No. 4,463,361).
- B. Claims 8-9 and 21-22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Koumura et al. (U.S. Pat. No. 4,463,361) in view of Yasui et al. (U.S. Pat. No. 6,416,176).
- C. Claims 13 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Koumura et al. (U.S. Pat. No. 4,463,361) in view of Martin et al. (U.S. Pat. No. 5,255,020).
- D. Claim 24 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Koumura et al. (U.S. Pat. No. 4,463,361) in view of Greive (U.S. Pat. No. 6,834,949).

These rejections are respectfully traversed.

Applicant submits that the arguments presented above regarding claim 1 apply here equally.

In addition, claim 11 recites that “the substrate comprises a substantially rigid material.” The Examiner asserts that the apparatus of Koumura as described and as shown in Figures 1 and 2 is capable to be used for printing onto substantially rigid substrates, for example boards. Applicant respectfully disagrees. Figure 1 of Koumura appears to show that the substrates to be printed (papers 2) are held generally

horizontally in a cassette 1 before being fed around rollers and guide 14 to a vertical position adjacent the recording heads 22, 23. In other words, the substrates must be bent in order to be fed into the printing area. Therefore, the apparatus of Koumura could not be used to print onto rigid boards, for example advertising hoardings or billboards as they could not be bent to follow the required substrate path.

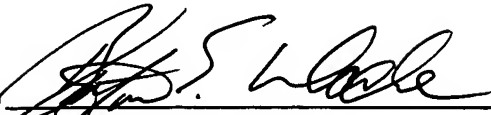
In view of the foregoing, Applicant submits that the rejected claims define over the art cited by the Examiner.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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